CLAIMS

1. A method for deep paging with a paging channel message in a communication system in which communication channels are generated using a set of orthogonal binary sequences of pre-selected length m and data is transferred at a minimum data rate or D bits per second, comprising the steps of:

forming at least one deep paging channel using an additional orthogonal sequence of length Nm, N being a positive integer, generated from one of said set of orthogonal sequences; and

transmitting said paging channel message on said paging channel at a data rate of less than D bits per second.

2. The method of claim 1, wherein said orthogonal binary sequences and additional orthogonal sequence are Walsh sequences.

3. The method of claim 2, wherein said orthogonal binary sequences are Walsh sequences of length 64 or less, and said additional orthogonal binary sequence is an additional Walsh sequence having a length greater than or equal to 128.

4. The method of claim 2, wherein said orthogonal binary sequences are Walsh sequences of length 128 or less, and said additional orthogonal binary sequence is an additional Walsh sequence having a length greater than or equal to 256.

5. The method of claim 3, wherein said additional Walsh sequence has a length of 65536 chips.

6. The method of claim 3, wherein said additional Walsh sequence is an auxiliary Walsh sequence.

7. The method of claim 1, wherein said data rate is less than 10 bits per second.

8. A method for deep paging with a paging channel message in a CDMA communication system wherein a plurality of Walsh sequences are used to form a plurality of orthogonal channels, comprising the steps of:

creating at least one auxiliary Walsh sequence from one of said plurality of Walsh sequences;

forming a paging channel with said auxiliary Walsh sequence and said paging channel message; and

transmitting said paging channel message over said paging channel at a data rate of less than 4800 bits per second.

9. The method of claim 8, wherein said auxiliary Walsh sequence has a length greater than or equal to 128.

10. The method of claim 8, wherein said auxiliary Walsh sequence has a length of 65536 chips.

11. The method of claim 8, wherein said data rate is less than 10 bits per second.

12. The method of claim 8, further comprising the step of creating at least a second auxiliary Walsh sequence from said one of said plurality of Walsh sequences.

13. The method of claim 12, further comprising the step of combining synchronization channel information with said second auxiliary Walsh sequence, thereby creating an auxiliary sync channel.

14. The method of claim 12, further comprising the step of creating additional auxiliary Walsh sequences from said one of said plurality of Walsh sequences and forming additional deep paging channels using said additional auxiliary Walsh sequences.

15. The method of claim 1, further comprising the step of creating at least a second auxiliary orthogonal sequence from said one of said plurality of orthogonal sequences.

16. The method of claim 15, further comprising the step of combining synchronization channel information with said second auxiliary orthogonal sequence, thereby creating an auxiliary sync channel.

17. The method of claim 1, further comprising the step of creating additional deep paging channels using additional orthogonal sequences of length *Nm*, *N* being a positive integer, generated from said one of said set of orthogonal sequences.

18. The method of claim 1, further comprising the step of creating additional deep paging channels using additional orthogonal sequences of length *Nm*, *N* being a positive integer, generated from others of said set of orthogonal sequences.

19. A method for compensating for the Doppler effect in a communication system where messages are transmitted at a low data rate to a user terminal that is inside a building, comprising the steps of:

acquiring a pilot signal prior to the user terminal entering the building;

placing the user terminal into a deep paging mode prior to the user terminal entering the building;

tracking Doppler as the user terminal proceeds into the building; and

monitoring an auxiliary paging channel after activating said deep paging mode.

20. The method of claim 19, wherein paging channel messages transmitted over said auxiliary paging channel are combined with a Walsh sequence having a length greater than or equal to 128 chips.

21. The method of claim 19, further comprising the step of acquiring an auxiliary synchronization signal.

22. The method of claim 19, further comprising the step of acquiring an auxiliary pilot signal.

23. The method of claim 22, wherein paging channel messages transmitted over said auxiliary paging channel are transmitted at a data rate of less than 4800 bits per second.

24. A method for compensating for the Doppler effect in a communication system where messages are transmitted at a low data rate to a user terminal that is inside a building, comprising the steps of:

receiving at the user terminal ephemeris messages transmitted from a gateway;

storing in the user terminal said ephemeris messages;

determining the location of the user terminal;

determining Doppler based on said location and said ephemeris messages stored in the user terminal; and

acquiring a pilot signal.

25. The method of claim 24, wherein said step of determining the location of the user terminal includes the step of storing the location of the user terminal each time the user terminal registers with a gateway.

26. The method of claim 24, wherein said step of determining the location of the user terminal includes the step of receiving a global positioning system (GPS) signal.